CLAIMS

1. A method of separating a pancreatic stem cell from the pancreas of a mammal using two or more kinds of substances having specific affinity for a marker protein selected from the group consisting of c-Met, c-Kit, CD45 and TER119, or a gene encoding the same.

2. A method of separating a pancreatic stem cell from the pancreas of a mammal using two or more kinds of substances having specific affinity for a marker protein selected from the group consisting of c-Met, c-Kit, CD45, TER119 and Flk-1, or a gene encoding the same.

3. The method of claim 1 or 2, wherein the substance having specific affinity is an antibody against the marker protein.

4. A method of identifying a pancreatic stem cell of a mammal using two or more kinds of substances having specific affinity for a marker protein selected from the group consisting of c-Met, c-Kit, CD45 and TER119, or a gene encoding the same.

5. A method of identifying a pancreatic stem cell of a mammal using two or more kinds of substances having specific affinity for a marker protein selected from the group consisting of c-Met, c-Kit, CD45, TER119 and Flk-1, or a gene encoding the same.

6. The method of claim 4 or 5, wherein the substance having specific affinity is an antibody against the marker protein.

7. A method of separating a pancreatic stem cell from the pancreas of a mammal, which comprises a step of analyzing the expression state of two or more marker proteins selected from

the group consisting of c-Met, c-Kit, CD45 and TER119, or a gene encoding the same.

8. A method of separating a pancreatic stem cell from the pancreas of a mammal, which comprises a step of analyzing the expression state of two or more marker proteins selected from the group consisting of c-Met, c-Kit, CD45, TER119 and Flk-1, or a gene encoding the same.

9. A method of identifying a pancreatic stem cell from the pancreas of a mammal, which comprises a step of analyzing the expression state of two or more marker proteins selected from the group consisting of c-Met, c-Kit, CD45 and TER119, or a gene encoding the same.

10. A method of identifying a pancreatic stem cell from the pancreas of a mammal, which comprises a step of analyzing the expression state of two or more marker proteins selected from the group consisting of c-Met, c-Kit, CD45, TER119 and Flk-1, or a gene encoding the same.

11. A pancreatic stem cell that can be separated from the pancreas of a mammal by the method described in any of claims 1, 2, 7 and 8.

12. The pancreatic stem cell of claim 11, which shows 4 markers of c-Met, c-Kit, CD45 and TER119 in a pattern of c-Met$^+$, c-Kit$^-$, CD45$^-$, TER119$^-$.

13. The pancreatic stem cell of claim 11, which shows 5 markers of c-Met, c-Kit, CD45, TER119 and Flk-1 in a pattern of c-Met$^+$, c-Kit$^-$, CD45$^-$, TER119$^-$, Flk-1$^-$.

14. A method of screening a substance that induces differentiation of a pancreatic stem cell of a mammal, which comprises the following steps:

(i) a step of reacting a pancreatic stem cell with a test substance, and

(ii) a step of determining the expression of a pancreatic marker in the cell after the reaction.

15. A method of screening a substance that induces differentiation into liver · bile duct or stomach · intestine of a mammal, which comprises the following steps:

(i) a step of reacting a pancreatic stem cell of claim 12 or 13 with a test substance, and

(ii) a step of determining the expression of a liver· bile duct or stomach · intestine marker in the cell after the reaction.

16. A method of screening a substance that regulates a pancreatic function of a mammal, which comprises the following steps:

(i) a step of reacting a pancreatic stem cell or a cell differentiated from the stem cell with a test substance, and

(ii) a step of determining the expression of a pancreatic marker in the cell after the reaction.

17. A method of screening a substance that regulates the function of liver· bile duct or stomach · intestine of a mammal, which comprises the following steps:

(i) a step of reacting a pancreatic stem cell of claim 12 or 13 or a cell differentiated from the stem cell with a test substance, and

(ii) a step of determining the expression of a liver· bile duct or stomach · intestine marker in the cell after the reaction.

18. A cloned pluripotent pancreatic stem cell, which satisfies at least 2 of the characteristics selected from the group consisting of c-Met$^+$, c-Kit$^-$, CD45$^-$ and TER119$^-$.

19. A cloned pluripotent pancreatic stem cell, which satisfies at least 2 of the characteristics selected from the group consisting of c-Met$^+$, c-Kit$^-$, CD45$^-$, TER119$^-$ and Flk-1$^-$.

20. A pharmaceutical composition, which comprises:
i) a cloned pluripotent pancreatic stem cell of claim 18 or 19; and
ii) a pharmaceutically acceptable carrier.

21. A purified composition, which comprises: a cloned pluripotent pancreatic stem cell of claim 18 or 19.

22. Tissue regenerated from a cloned pluripotent pancreatic stem cell of claim 18 or 19.

23. An organ regenerated from a cloned pluripotent pancreatic stem cell of claim 18 or 19.

24. A method of transplanting a cloned pluripotent pancreatic stem cell into a host, which comprises:
i) obtaining the cloned pluripotent pancreatic stem cell of claim 18 or 19; and
ii) transplanting said stem cell into the host.

25. A method of producing a pancreatic stem cell, which comprises:
i) providing cells from the pancreas of a mammal; and
ii) selecting cells which satisfies at least 2 of the marker protein expression patterns selected from the group consisting

of c-Met$^+$, c-Kit$^-$, CD45$^-$ and TER119$^-$, or a gene encoding the same.

26. A method of producing a pancreatic stem cell, which comprises:

i) providing cells from the pancreas of a mammal; and

ii) selecting cells which satisfies at least 2 of the marker protein expression patterns selected from the group consisting of c-Met$^+$, c-Kit$^-$, CD45$^-$, TER119$^-$ and Flk-1$^-$ or a gene encoding the same.

27. The method according to claim 25 or 26, wherein the step of selecting cells further comprises selecting cells using an antibody having a specific affinity against the marker protein.

28. A method of screening for a pancreatic stem cell of a mammal, which comprises;

i) containing a population of cells with an antibody having specific affinity for a marker protein selected from the group consisting of c-Met, c-Kit, CD45 and TER119, or a gene encoding the same; and

ii) fractionating the population of cells to obtain a cell having multi-differentiation ability.

29. The method of claim 28, wherein the cells are pancreatic cells.

30. The method of claim 28, wherein the cells express a marker protein pattern of c-Met$^+$, c-Kit$^-$, CD45$^-$ and TER119$^-$.

31. The method of claim 28, wherein the cells express a marker protein pattern of c-Met$^+$, c-Kit$^-$, CD45$^-$, TER119$^-$ and Flk-1$^-$.

32. An agent for the prophylaxis or treatment of a pancreatic hypofunctional disease, which comprises the pancreatic stem cell of claim 12, 13, 18 or 19, or a cell differentiated from the stem cell.

33. The agent of claim 32, wherein the pancreatic hypofunctional disease is a disease selected from the group consisting of diabetes, chronic pancreatitis, autoimmune pancreatitis and pancreatic functional disorder from surgical removal of all or part of a pancreas.

34. An agent for the prophylaxis or treatment of a hypofunctional disease of the liver·bile duct, which comprises the pancreatic stem cell of claim 12, 13, 18 or 19, or a cell differentiated from the stem cell.

35. The agent of claim 34, wherein the hypofunctional disease of the liver·bile duct is a disease selected from the group consisting of acute hepatitis, chronic hepatitis, metabolic liver disease and hepatic functional disorder from surgical removal of all or part of a liver.

36. An agent for the prophylaxis or treatment of a hypofunctional disease of the stomach·intestine, which comprises the pancreatic stem cell of claim 12, 13, 18 or 19, or a cell differentiated from the stem cell.

37. The agent of claim 36, wherein the hypofunctional disease of the stomach·intestine is a disease selected from the group consisting of short bowel syndrome, inflammatory bowel disease, and stomach functional disorder from surgical removal of all or part of a stomach.